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| 490 | 7590 | 07/05/2005 | EXAMINER | |
| VIDAS, ARRETT & STEINKRAUS, P.A. 6109 BLUE CIRCLE DRIVE SUITE 2000 MINNETONKA, MN 55343-9185 | | | BURCH, MELODY M | |
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| | | | 3683 | |

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/811,672

Applicant(s)

HUTHER ET AL

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because of the inclusion of new matter – see the specification objection below. Support for the detailed connection between the time delay and the added sensors with the remainder of the brake system is not found in the originally filed disclosure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including

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annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

3. The amendment filed 4/11/05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The originally filed specification fails to provide support for the amends to the specification filed 4/11/05. For example, the originally filed disclosure fails to specifically show or disclose the delay being located in the new output line 52 or the detailed connection shown in amended figure 1. Examiner notes that the change to the paragraph starting on pg. 5 line 20 is not included in the originally filed specification. The originally disclosure lacks support for the specific placement of the lifting height and travel direction sensors.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

4. Claims 1-7 are objected to because of the following informalities: the phrase "breaking device" in the last line of claim 1 should be changed to --braking device--. Also in line 2 from the bottom of claim 1 "where in" should be changed to --wherein--.

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The remaining claims are objected to due to their dependency from claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 1. The phrase "a driving wheel" in line 3 of claim 1 is unclear since it is unclear whether Applicant intends to refer back to the driving wheel in line 2 or to a different driving wheel.

Re: claim 1. The phrase "the actual torque value" lacks proper antecedent basis in lines 5-6 from the bottom of the claim.

Re: claims 3 and 4. the phrase "a hard stop braking device (12)" in line 3-4 of claim 3 is indefinite. Element 12 is used to define first braking device in claim 1. Therefore, it is unclear whether the hard stop device and the first braking device are intended to be the same or different.

Re: claim 7. the phrase "a second braking signal" in line 2 from the bottom is indefinite. It is unclear to the Examiner whether Applicant intends to refer back to the previously recited second braking signal or to a different second braking signal.

The remaining claims are indefinite due to their dependency from claim 1.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6208926 to Wagner et al. in view of US Patent 3289062 to Danneltehl and US Patent 6122585 to Ono et al.

Re: claim 1. Wagner et al. teach in figures 1 and 2 a braking system capable of being used for battery powered industrial trucks, the system comprising a motor integrated in element 26 shown in figure 2 which drives a driving wheel or one of the wheels associated with elements 28, 30, 32, 34, a first braking device associated with the driving wheel, a brake pedal 42 with which a braking signal generator 100 is associated to generate a first electrical braking signal corresponding to a desired braking force value in response to the excursion of the brake pedal or output of element 100, a control device for the driving motor through which the torque of the driving motor is controlled, a first conversion unit shown in the area of elements 114, 118, 120 in the control device which converts the first braking signal into a desired torque value for the driving motor (the output of element 120 is desired brake torque), a second conversion unit in the control device which detects and converts the actual torque value of the driving motor into an actual braking amount value and generates an actual signal or the output of element 108 that is inputted into element 124, the braking device being

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controlled by a braking control device through a second braking signal 20 or 22, the braking control device including a comparator device 124 wherein the first braking signal is compared with the actual signal to form the second braking signal for the braking device.

Wagner et al. lack the motor being a three phase driving motor and lack the limitation of the torque value being converted into an actual braking force value.

Dannettell shows in figure 1 the use of a three phase motor 13 in an industrial truck. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the motor of Wagner et al. to have been a three phase motor, as taught by Dannettell, in order to provide a motor having lower locked rotor currents; higher starting torque; lower full load currents; and improved reliability due to the elimination of the starting capacitor required in a PSC motor circuit.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the braking system of Wagner et al., as modified, to have been utilized on an industrial truck, as taught by Dannettell, in order to provide a means of stopping an industrial truck to enable loading and unloading.

Ono et al. teach in col. 58 lines 19-25 the use of converting a torque signal into a braking force signal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the torque signals of Wagner et al. to have been converted to braking force signals, in view of the teachings of Ono et al., in order to

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provide a means of facilitating the control of the valves of the brake system which respond to brake force control instructions to provide pressure increases or decreases.

9. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6208926 to Wagner et al. in view of US Patent 3289062 to Dannetell and US Patent 6122585 to Ono et al. as applied to claim 1 above, and further in view of EP-0908348 (EP'348).

Re: claim 3. Wagner et al., as modified, lack the limitation of generating a hard stop signal.

EP '348 teaches in paragraph [0036] of EP '348 the limitation of the brake control device generating a hard stop signal (or supplementary braking signal) for the first braking device 36 when the braking signal of the braking signal generator becomes a maximum (the maximum in this case is 50% of maximum depression).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the braking system of Wagner et al., as modified, to have included the generation of a hard stop signal when the braking signal of the braking signal generator becomes a maximum, as taught by EP'348, in order to provide a means of maximizing braking capacity when braking demands are high in order to improve safety.

Re: claim 6. Wagner et al., as modified, lack travel direction sensor.

See paragraph [0043] of EP'348 in which it is explained that a travel direction sensor varies the second desired braking force in dependence on the direction of travel of an industrial truck.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the braking system of Wagner et al, as modified, to have included a travel direction sensor, as taught by EP'348, in order to provide a means of actively controlling the braking capacity based on the current conditions of the vehicle for improved brake performance.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6208926 to Wagner et al. in view of US Patent 3289062 to Dannetell and US Patent 6122585 to Ono et al. as applied to claim 1 above, and further in view of US Patent 6805415 to Isono et al.

Wagner et al., as modified, lack the limitation of the generating a hard stop signal when a monitoring device receives an error signal.

Isono et al. teach in col. 26 lines 48-53 the limitation of generating a hard stop signal (or maximum braking for a first braking device (on rear wheel side)) when a monitoring device (or unit which determines the disclosed failure condition) receives an error signal (or evidence of failure) with regard to a second braking device (on front wheel side).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Wagner et al., as modified, to have included a monitoring device, as taught by Isono et al., in order to provide a means of compensating for the failure of one braking device by increasing the braking on the other braking device for improved vehicle safety.

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11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6208926 to Wagner et al. in view of US Patent 3289062 to Danneltehl and US Patent 6122585 to Ono et al. and EP'348 as applied to claim 3 above, and further in view of JP-4117105 (JP'105).

Wagner et al., as modified, fail to include the limitation of providing a hard stop signal via a time delay member.

JP'105 teaches in lines 3-5 from the bottom of the constitution the limitation of providing a hard stop signal or emergency brake signal via a time delay member 10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Wagner et al., as modified, to have included a time delay member, as taught by JP'105 in order to provide a means of accurately controlling and having the capability to adjust when a hard stop braking will occur.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6208926 to Wagner et al. in view of US Patent 3289062 to Danneltehl and US Patent 6122585 to Ono et al. as applied to claim 1 above, and further in view of GB-2293364 (GB'364).

Wagner et al., as modified, fail to include the limitation of a lifting height sensor.

GB'364 teaches in the abstract the use of a brake system for an industrial truck including a height sensor 6 and having the braking force varied in dependence of the lifting height as taught in lines 1-2 of the abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Wagner et al., as modified, to have included a lift height sensor in an industrial truck brake system, in view of the teachings of GB'364, in order to provide a means of controlling braking torque as a function of the elevation height of the forks for providing smooth retardation of an industrial truck vehicle.

Allowable Subject Matter

13. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Wagner et al. teach replacing the brake regulator with a current regulator but not including a current regulator in addition to the other conversion units.

Response to Arguments

14. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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June 27, 2005

Melody M. Bruch
6/27/05